49. (New) The interface of claim 33 wherein the encapsulant and support material have a combined thickness encapsulating beyond one end of the individual lengths of the plurality of fibers.

50. (New) The interface of claim 33 wherein the encapsulant and support material have a combined thickness encapsulating at least approximately 85% of the individual lengths of the plurality of fibers.

REMARKS

Claims 32-50 are pending in the application with claims 49 and 50 added herein.

Claims 32, 33, 35, and 46-48 stand rejected as being anticipated under 35 U.S.C. 102(b) by amended U.S. Application 09/103,416 (Pinter). Claims 34, 36, 42, 43, and 45 also stand rejected as being anticipated under 35 U.S.C. 102(b) by Pinter or obvious over Pinter. Claims 37-41 and 44 further stand rejected as being unpatentable over Pinter. Applicants request reconsideration.

The filing date for Pinter is June 24, 1998. The present application relies upon Provisional Patent Application No. 60/090,406 also filed on June 24, 1998. Accordingly, the filing date of Pinter does not precede the priority date of the present application. Further, Pinter is not a printed publication and does not constitute public use or sale in this country, thus rejection under 102(b) is not proper. Page 2 of the Office Action states that the preamble of the Jepson claims in Pinter allegedly constitute what is conventional or known. However, the Office cannot ascribe any date to the alleged admission that

precedes the priority date of the present application. That is, the subject matter alleged to be conventional or known could not have became conventional or known before June 24, 1998, the common application date of Pinter and the present application.

Further, MPEP 2129 states that a Jepson preamble is only an implied admission of prior art. MPEP 2129 further states that claims must be read in light of the specification and the preamble is treated as prior art when the specification confirms the admission. Thorough review of the Pinter specification reveals that no such evidence exists confirming that the subject matter of the Jepson preambles in Pinter was invented by another before the Pinter applicants' invention. Since the Pinter specification does not confirm invention by another before the invention claimed by Pinter, the subject matter could not have become conventional or known before to the priority date of the present application. Applicants further assert that the Jepson preambles of Pinter do not constitute admissions of what is conventional or known because the requirements of MPEP 2129 are not met to establish such an admission. There merely exists an implied admission that cannot be confirmed as required to become an actual admission. At least for such reasons, claims 32-48 are not anticipated by and/or unpatentable over Pinter. Applicants request allowance of such claims in the next Office Action.

Claims 32-48 stand rejected as being unpatentable over Koon '548 in view of Koon '707. Applicants request reconsideration.

Claim 32 sets forth a thermal interface that includes, among other features, an encapsulant and a plurality of thermally conductive fibers. The encapsulant has a thickness encapsulating a portion of the individual lengths of the plurality of fibers. An

average length of the fibers is greater than an average thickness of the encapsulant. Pages 5-6 of the Office Action admit that Koon '548 does not teach an encapsulant. Applicants further assert that Koon '548 does not provide any disclosure or suggestion whatever of an encapsulant having the claimed average thickness less than an average length of the fibers. The Office Action relies upon Koon '707 as allegedly teaching encapsulated, flocked fibers. The Office Action further alleges that it would be obvious to add encapsulant to the flocked fibers of Koon '548 to increase heat transfer. However, Applicants assert that disclosure or suggestion of the claimed thermal interface requires more than merely adding encapsulant to the Koon '548 flocked fibers. The express disclosure of Koon '548 teaches against such a combination.

Koon '707 merely describes fiber flocking opposing surfaces separately, interdigitating the fibers of a first surface with the fibers of a second surface, and applying a polymer material. Such a teaching does not provide any disclosure or suggestion of an average length of the fibers being greater than an average thickness of the encapsulant, as set forth in claim 32. Rather, as stated in column 5, lines 27-32 and 45-50 of Koon '707, at least some contact of the opposing, interdigitated fibers is required to establish a conductive path across a gap between the opposing surfaces. As an example, column 5, lines 41-45 describes a 100 mil gap and fibers with a 60 mil overlap. Such an overlap is provided by 80 mil fibers. Accordingly, the average length of fibers is not greater than the average thickness of encapsulant filling the gap. The express teachings of Koon '707 instead provide an encapsulant intentionally more thick than the fiber length. No disclosure or suggestion whatever exists in Koon '707 for an average length of fibers greater than an

average thickness of encapsulant.

Applicants assert that any addition of encapsulant to the flocked fibers of Koon '548 destroys an intended purpose of such reference. Column 4, lines 28-32 of Koon '548 states that an intended purpose is to maximize heat transfer rate. Column 4, line 33 to column 5, line 8 describe that maximizing heat transfer rate involves maximizing the length of fibers exposed to gas flow. Specifically, column 5, lines 41-44 state that "fibers 104 should be as long as possible." Any addition of encapsulant to fibers 104 necessarily reduces the length of fibers exposed to gas flow. Accordingly, encapsulant addition is contradictory to the intended purpose of Koon '548.

The mere fact that the prior art can be modified does not make the modification obvious "unless the prior art suggested the desirability of the modification." In *re* Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Accordingly, if a proposed modification of the prior art would render the prior art device or process "inoperable for its intended purpose," then no suggestion or motivation exists to make the proposed modification. Id., MPEP 2143.01. Pages 5-6 of the Office Action imply that a motivation of adding encapsulant to the Koon '548 flocked fibers is to increase heat transfer. However, such addition clearly destroys an intended purpose of Koon '548. Thus, no suggestion or motivation can be considered to exist to make the proposed modification.

Pages 5-6 further imply improvement of the Koon '548 structure by adding encapsulant and a heat sink instead of using air cooling. The Office Action relies upon Koon '707 as support for such a modification. However, the only pertinent suggestion in Koon '707 would require flocking such a heat sink in addition to the Koon '548 substrate

and interdigitating the opposing fibers. Such a combination clearly would not provide any disclosure or suggestion of an average fiber length greater than an average thickness in a thermally conductive composite, as set forth in claim 32.

For at least the reasons set forth above, neither Koon '548 nor Koon '707 disclose or suggest an average length of fibers being greater than an average thickness of encapsulant. Since each reference is deficient, it is not seen how a combination of such references can disclose or suggest every element of claim 32. Also, combination of such references in the manner asserted in the Office Action is not appropriate since it destroys an intended purpose of Koon '548. Further, even if combined, the two references do not disclose or suggest every element set forth in claim 32.

Claims 33, 34, 49, and 50 depend from claim 32 and are further patentable over the cited combination at least for such reason as well as the additional limitations of such claims not disclosed or suggested. For example, new claim 49 depends from claim 33 and further sets forth that support material and the encapsulant have a combined thickness encapsulating beyond one end of the individual lengths of the plurality of fibers. The subject matter of claim 49 is supported in the specification at least by figure 2 showing support material and encapsulant extending beyond one end of the fibers. In contrast, Koon '548 merely provides in column 6, line 13 and elsewhere attaching fibers "by a first end." Koon '548 does not describe encapsulating fibers beyond one end of the fibers. Also for example, new claim 50 sets forth that the encapsulant and support material have a combined thickness encapsulating at least approximately 85% of the fiber lengths. Page 8, line 27 to page 9, line 6 and elsewhere in the specification support claim 50 with

description of a 0.020 inch fiber and a height of about 0.017 inch. Further, "approximately 85%" is supported since the gel may shrink as a result of curing.

Claim 35 sets forth a thermal interface including, among other features, fibers embedded in a support material having first fiber portions that extend upwardly out of the support material, an encapsulant between the first fiber portions and over the support material, and the support material, encapsulant, and fibers forming a thermally conductive composite. A third surface defines an outermost surface of the thermally conductive composite except for the first fiber portions terminating in tips that are elevationally above the third surface of the encapsulant. The thermal interface of claim 35 thus includes fiber tips elevationally above a third surface of the thermally conductive composite. As can be appreciated from the discussion above regarding claim 32, Koon '548 and Koon '707 further do not disclose or suggest the thermal interface of claim 35 at least for similar reasons. Neither reference discloses or suggests fiber first portions terminating in tips elevationally above an outermost surface of a thermally conductive composite and elevationally above an encapsulant. Also, combination of such references would be inappropriate and, even if combined, the result would not disclose or suggest every element of claim 35. Claim 36 depends from claim 35 and is further patentable over the cited combination at least for such reason as well as the additional limitations of such claim.

Claim 37 sets forth a thermally conductive structure that includes, among other features, thermally conductive fibers embedded in a layer of adhesive with first portions extending upwardly from the adhesive and an encapsulant between the first fiber portions

and over the adhesive, tips of the fibers extending to above the encapsulant. Given the assertions above regarding claim 32, claim 37 is also patentable over Koon '548 in view of Koon '707 at least for such reasons. The cited combination does not disclose or suggest fiber tips extending above an encapsulant that is over an adhesive into which fibers are embedded. Claims 38-41 depend from claim 37 and are further patentable over the cited combination at least for such reason as well as the additional limitations of such claims not disclosed or suggested.

Claim 42 sets forth a thermally conductive structure that includes, among other features, fibers embeded in a layer of adhesive having first portions extending upwardly out of the adhesive and an encapsulant between the first fiber portions and over the adhesive. A third surface defines an outermost surface of the thermally conductive structure except for first fiber portions terminating in tips above the third surface and the encapsulant. In keeping with assertions above regarding claims 32 and 35, claim 42 is also patentable over the cited references. Claims 43 and 44 depend from claim 42 and are further patentable over the cited art at least for such reason as well as the additional limitations of such claims not disclosed or suggested.

Claim 45 sets forth a thermally conductive structure that includes, among other features, fibers embedded in a layer of adhesive having first portions extending upwardly out of the adhesive and an encapsulant over the adhesive between first fiber portions. The encapsulant is beneath free tips of the fibers. Neither Koon '548 nor Koon '707 considered alone or in combination provide any disclosure or suggestion of an encapsulant over an adhesive of a thermally conductive structure and beneath free tips of fibers encapsulated

by the encapsulant. At least for the additional reasons described above regarding claim 32, claim 45 is thus patentable over Koon '548 in view of Koon '707.

Claim 46 sets forth a method of making a thermal interface that includes, among other features, combining an encapsulant with fibers, encapsulating the fibers such that an average length of the fibers is greater than an average thickness of the encapsulant, and forming a thermally conductive composite. As can be appreciated from the discussion above regarding claim 32, claim 46 is further patentable over the cited art. Claim 47 depends from claim 46 and is also patentable at least for such reason.

Claim 48 sets forth a method of making a thermal interface that includes, among other features, embedding fibers in a support material having first portions that extend upwardly out of the support material, applying an encapsulant between the first fiber portions and over the support material, and forming a thermally conductive composite. The method further includes forming a third surface defining an outermost surface of the thermally conductive composite except for fiber first portions terminating in tips elevationally above the third surface and the encapsulant. Given the discussion above regarding claims 32 and 35, it follows that claim 48 is also patentable over the cited art.

Applicants herein establish patentability of claims 32-50 over all cited references at least for the reasons described herein. Accordingly, Applicants request allowance of all pending claims 32-50 in the next Office Action.

Respectfully submitted,

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By: _____
James E. Lake
Reg. No. 44,854